AMENDMENTS TO THE CLAIMS

Please amend the claims as follows. No new matter has been added.

1. (Currently Amended) A method of training a neural network to perform decoding of a time-varying signal comprising a sequence of input symbols, which is coded by a convolutional coder such that each coded output symbol depends on more than one input symbol, characterized by repetitively:

providing a plurality of successive input symbols to the neural network and to the convolutional coder,

comparing the network outputs with the input signals; and

adapting parameters of the network to reduce differences there between~~.~~;

<u>wherein the input symbol is transmitted together with the plurality of output symbols to a communications network decoder.</u>

2. (Previously Presented) The method according to claim 1, further comprising supplying the neural network with the coded output symbols and at least some of the plurality of successive input symbols.

3. (Currently Amended) A method of encoded communications in which input symbols are convolutionally encoded to provide, for each input symbol, a plurality of output symbols which depend on the input symbol, and the input symbol is transmitted together with the plurality of output symbols to a <u>communications</u> ~~neural~~ network for decoding encoded communications in which received input symbols are convolutionally encoded to provide, for each received input symbol, a plurality of output symbols which depend on the input symbol, connected so as to feed back to its inputs at least some of the decoded symbols it generates at its outputs, wherein at least one of the input symbols is transmitted to the neural network together with the coded output symbols, and fed to its inputs together with the fed-back decoded symbols.

4. (Currently Amended) A neural network for decoding encoded communications in

which input symbols are convolutionally encoded to provide, for each input symbol, a plurality of output symbols which depend on the input symbol, connected so as to feed back to its inputs at least some of the decoded symbols it generates at its outputs, wherein at least one of the input symbols is transmitted to the <u>communications</u>neural network <u>decoder </u>together with the coded output symbols, and fed to its inputs together with the fed-back decoded symbols.

5. (Cancelled)

6. (Previously Presented)   The neural network according to claim 4, further comprising a programmable signal processing device programmed to perform a plurality of neuron computations on a received signal.

7. (Previously Presented) The neural network according to claim 4, further comprising an integrated circuit having a plurality of neuron computation devices operating to perform neuron computations in parallel.

8. (Previously Presented) A communication[[s]] terminal operable to communicate selectively over a communications channel in a plurality of different communications modes, comprising a data processing device for processing time-varying signals, said data processing device being arranged to implement the neural network according to claim 4.

9. (Previously Presented) The communication terminal according to claim 8, wherein the communications terminal device is operable to add a new communication[[s]] mode by receiving newparameter values via said communication[[s]] channel.

10. (Previously Presented) A communication[[s]] station for use in a system including a the communication terminal according to claim 9, the station comprising means for transmitting a signal comprising the new parameter values for neural computations, to add a new communication[[s]] mode to said communication terminal.